

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently amended) A fuel cell electrode, comprising:

- (a) a plurality of carbon nanotubes, wherein the carbon nanotubes comprise single-wall carbon nanotubes having a diameter of about 0.7 – 3.5 nm, wherein the single-wall carbon nanotubes are derivatized with a functional group, and wherein the plurality forms a mat of carbon nanotubes, wherein the mat has a planar area and wherein the mat has a thickness greater than one micron, and
- (b) a catalyst metal comprising selected from the group consisting of chromium (Cr), molybdenum (Mo), tungsten (W), manganese (Mn), technetium (Tc), rhenium (Re), iron (Fe), ruthenium (Ru), osmium (Os), cobalt (Co), rhodium (Rh), iridium (Ir), nickel (Ni), palladium (Pd), platinum (Pt), copper (Cu), silver (Ag), gold (Au), zinc (Zn), tin (Sn), aluminum (Al), and combinations thereof, in contact with the mat of carbon nanotubes, wherein the catalyst metal is present in an amount less than 400 $\mu\text{g}/\text{cm}^2$ of the planar area of the mat of the carbon nanotubes, and wherein the electrode provides greater than 1 mA/cm^2 per $\mu\text{g Pt}/\text{cm}^2$ of the planar area of the mat of carbon nanotubes.

Claims 2.-3. (Cancelled)

Claim 4. (Previously presented) The electrode of claim 1 wherein the functional group is a carboxylic acid group.

Claim 5. (Cancelled)

Claim 6. (Currently amended) The electrode of claim 1 wherein the catalyst metal further comprises ~~platinum and~~ ruthenium.

Claim 7. (Cancelled)

Claim 8. (Original) The electrode of claim 1 wherein the catalyst metal is present in an amount less than $100 \mu\text{g}/\text{cm}^2$ of the planar area of the mat of the carbon nanotubes.

Claim 9. (Original) The electrode of claim 1 wherein the catalyst metal is present in an amount less than $50 \mu\text{g}/\text{cm}^2$ of the planar area of the mat of the carbon nanotubes.

Claim 10. (Original) The electrode of claim 1 wherein the catalyst metal is present in an amount less than $25 \mu\text{g}/\text{cm}^2$ of the planar area of the mat of the carbon nanotubes.

Claim 11. (Original) The electrode of claim 1 wherein the catalyst metal is present in an amount less than $10 \mu\text{g}/\text{cm}^2$ of the planar area of the mat of the carbon nanotubes.

Claim 12. (Previously presented) A hydrogen/oxygen proton exchange membrane fuel cell (PEMFC) comprising the electrode of claim 1.

Claim 13. (Currently amended) The electrode of claim 1 wherein ~~a) the electrode is a component in a hydrogen/oxygen PEMFC, wherein b) the catalyst metal comprises platinum, wherein c) the carbon nanotubes are single wall carbon nanotubes, and wherein d) the electrode provides greater than $1 \text{ mA}/\text{cm}^2$ per $\mu\text{g Pt}/\text{cm}^2$ of the planar area of the mat of carbon nanotubes.~~

Claim 14. (Original) The electrode of claim 13 wherein the electrode provides greater than $10 \text{ mA}/\text{cm}^2$ per $\mu\text{g Pt}/\text{cm}^2$ of the planar area of the mat of carbon nanotubes.

Claim 15. (Original) The electrode of claim 13 wherein the electrode provides greater than $50 \text{ mA}/\text{cm}^2$ per $\mu\text{g Pt}/\text{cm}^2$ of the planar area of the mat of carbon nanotubes.

Claim 16. (Original) The electrode of claim 13 wherein the electrode provides greater than $100 \text{ mA}/\text{cm}^2$ per $\mu\text{g Pt}/\text{cm}^2$ of the planar area of the mat of carbon nanotubes.

Claim 17. (Previously presented) A direct methanol fuel cell (DMFC) comprising the electrode of claim 1.

Claims 18.-62. (Cancelled)

Claim 63. (New) The electrode of claim 1 wherein the catalyst metal further comprises a metal selected from the group consisting of chromium (Cr), molybdenum (Mo), tungsten (W), manganese (Mn), technetium (Tc), rhenium (Re), iron (Fe), osmium (Os), cobalt (Co), rhodium (Rh), iridium (Ir), nickel (Ni), palladium (Pd), copper (Cu), silver (Ag), gold (Au), zinc (Zn), tin (Sn), aluminum (Al), and combinations thereof.